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EXAMINER

SANTOS RODRIGUEZ, JOSEPH M

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SRIRANG MANOHAR and
ANTONIUS GERARDUS JOHANNES MARIA VAN LEEUWEN

Appeal 2015-003725¹
Application 12/519,659²
Technology Center 3700

Before JOSEPH A. FISCHETTI, PHILIP J. HOFFMANN, and
KENNETH G. SCHOPFER, *Administrative Patent Judges*.

HOFFMANN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the rejection of claims 1–20. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ Our decision references Appellants’ Specification (“Spec.,” filed June 17, 2009), Appeal Brief (“Appeal Br.,” filed Nov. 3, 2014), and Reply Brief (“Reply Br.,” filed Feb. 2, 2015), as well as the Examiner’s Answer (“Answer,” mailed Dec. 2, 2014).

² According to Appellants, “[t]he real parties in interest in this appeal includes [sic] PA Imaging Holding B.V., . . . UT International Ventures Holding B.V., . . . and Universiteit Twente, of the Netherlands.” Reply Br. 2.

According to Appellants, the invention relates to “an apparatus and method that may be used for thermoacoustic imaging.” Spec. 1, ll. 2–3. Claims 1 and 13 are the only independent claims. *See* Appeal Br., Claims App. We reproduce claim 1, below, as representative of the appealed claims.

1. An imaging apparatus, comprising
an electromagnetic radiation source;
a radiation responsive acoustic signal generator located outside a sample area being irradiated by the electromagnetic radiation source, wherein the radiation responsive acoustic signal generator is made of a material that generates acoustic signals by photoacoustic effect in response to electromagnetic irradiation from the electromagnetic radiation source;
an acoustic signal detection probe arrangement for detecting acoustic signals generated in the sample area in response to the irradiation and for detecting an acoustic signal from the radiation responsive acoustic signal generator that has travelled through the sample area;
a computing system configured to:
distinguish first acoustic signal detections attributed to the acoustic signal generated by the radiation responsive acoustic signal generator and second acoustic signal detections attributed to the acoustic signals generated by the sample area;
perform, from the first acoustic signal detections, a tomographic computation of an acoustic transmission parameter as a function of position in the sample area.

Id.

REJECTIONS AND PRIOR ART

The Examiner rejects claims 1–9 and 11–20 under 35 U.S.C. § 103(a) as unpatentable over Jeon (US 2003/0225320 A1, pub. Dec. 4, 2003), C.G.A. Hoelen et al., *Three-dimensional photoacoustic imaging of blood vessels in tissue*, Department of Applied Physics, University of Twente, Optics Letters, Vol. 23, No. 8, pages 648–650 (1998) (hereinafter “Hoelen”), and Xing Jin et al., *Correction of the effects of acoustic heterogeneity on thermoacoustic tomography using transmission ultrasound tomography*, Optical Imaging Laboratory, Department of Biomedical Engineering, Texas A&M University, Proc. of SPIE, Vol. 6086, pages 60860W-1 to 60860W-5 (2006) (hereinafter “Jin”).

The Examiner rejects claim 10 under 35 U.S.C. § 103(a) as unpatentable over Jeon, Hoelen, Jin, and Morita (US 5,596,989, iss. Jan. 28, 1997).

Answer 2–7.

ANALYSIS

With respect to the rejection of independent claim 1, the Examiner relies on a finding that “Jeon[] discloses that the same electromagnetic radiation source for both irradiating a sample space as well as for producing an acoustic signal in a radiation responsive acoustic signal generator is used.” Answer 9 (emphasis omitted). Based on our review, we find that the Examiner’s findings do not support our sustaining the rejection of the claims on appeal. Thus, we do not sustain the rejection.

Specifically, we agree with Appellants that “Jeon . . . does not make known or obvious a radiation responsive acoustic signal generator, but

alternatively makes known an acoustic generator.” Reply Br. 2. Although the Examiner references paragraphs 50 and 52 of Jeon, neither paragraph discloses that acoustic signal generator 53 generates a signal in response to electromagnetic radiation, or any other source. Answer 8; Jeon ¶¶ 50, 52. For example, Jeon’s paragraph 50 appears to discuss the application of light to a person’s body, but does not appear to describe that acoustic signal generator 53 generates an acoustic signal based on light. Jeon ¶ 50. This is consistent with Jeon’s paragraph 51, which expressly states that “[i]n operation, the light source **51** applies an incident light having a predetermined frequency on a predetermined part of the human body **59**,” without describing the light being applied to, or otherwise affecting operation of, signal generator 53. *Id.* ¶ 51. Although Jeon’s paragraph 52 describes the generation of a signal by generator 53, this portion does not state that generator 53 generates the signal in response to light or radiation. *Id.* ¶ 52.

Jeon further states that it is “[t]he controller [that] controls the light source **51** and the acoustic signal generator **53**,” without describing light source 51 as somehow being used by generator 53 to generate the signal. *Id.* ¶ 56. Therefore, because it is not clear that Jeon’s signal generator 53 is a radiation responsive signal generator, it is unclear that “the same electromagnetic radiation source . . . [that] irradiat[es] a sample space . . . produc[es] [the] acoustic signal in” acoustic signal generator 53, as required by claim 1. *See* Reply Br. 3–4.

Thus, based on the foregoing, we do not sustain the rejection of claim 1, or the rejections of claims 2–12 that depend from claim 1, inasmuch as the Examiner does not establish that any other reference remedies the

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deficiency in rejection of claim 1. Further, because independent claim 13 recites a similar limitation as claim 1, and is rejected by the Examiner for similar reasons as claim 1, we do not sustain the rejection of claim 13 or its dependent claims 14–20.

DECISION

We REVERSE the Examiner's obviousness rejections of claims 1–20.

REVERSED